

REMARKS

Applicants thank the Examiner for the first complete examination of the instant application. Claims 1-29 are currently pending. Claims 1, 18, 22, 26 and 29 are independent. Reconsideration of this application, as amended, is respectfully requested.

DRAWINGS OBJECTION

The drawings stand objected to by the Examiner. In particular, the Examiner indicates that Figure 5 fails to include the reference numeral 50. However, upon review of the instant application, it appears that Figure 5 should include the reference numeral 70 instead of the reference numeral 50 recommended by the Examiner. This is consistent with the disclosure found on page 7, line 20 of the instant specification. The Examiner is respectfully requested to refer thereto where it does indicate that “card 70 includes first and second antennas 72 and 74....”

Applicants have submitted herewith a Drawing Correction Authorization Request (DCAR) for the Examiner’s consideration. The DCAR includes a marked-up version of Figure 5 for the Examiner’s consideration. The correction to the figure is shown in red ink. The Examiner is respectfully requested, in view of the submitted DCAR, to reconsider and withdraw the drawings objection. Acknowledgment of the acceptance of the modified Figure 5 is respectfully requested in response to this Amendment.

SPECIFICATION OBJECTION

The Examiner objects to the disclosure of the specification as it is asserted that it contains several minor informalities. In particular, the Examiner requests that the phraseology "WaveLAN" should include a trademark designation. Applicants have amended the specification in response to the specification objection. In accordance with the amendments to the specification, Applicants respectfully submit that the specification objection has been obviated. Accordingly, reconsideration and withdrawal of the specification objection are respectfully requested.

EMBODIMENT SUMMARY

The following embodiment summary is provided to further enhance the Examiner's understanding of an embodiment of the present invention. However, it should be understood that the following summary of an embodiment of the present invention is not limiting of the claimed invention.

Figure 2 illustrates one embodiment of a modified wireless telephone architecture for performing a measurement function according to the present invention. As is illustrated, an existing wireless telephone architecture 50 is connected to a coupler 58 and a circulator 52. The circuitry illustrated in Figure 2 also includes a mixer 56 and an antenna 54.

During normal operating conditions of a wireless telephone, the architecture 50 utilizes the antenna 54 for normal wireless communications with another mobile source or other such wireless device. However, the wireless phone architecture 50 may be also used in conjunction

with the other circuitry included in Figure 2 for making measurements of prescribed characteristics of a subject.

Such a measurement of a prescribed characteristic of a subject will now be discussed. In performing this measurement, the architecture 50 supplies a signal to the circulator 50, which is provided thereby to the antenna 54. The transmitted signal reflects off a subject 2 (see Fig. 1), and is received by the antenna 54. The circulator 52 supplies the received signal to the mixer 56, which mixes the received signal with the transmitted signal to obtain a different signal, which is proportional to target motion, (e.g., heart, lungs, chest, etc.).

Therefore, as is clearly understood by the above description, the existing wireless phone architecture 50 not only is capable of performing a wireless function independent from sensing, but is also capable of using circuitry for performing a sensing function of at least one prescribed characteristic of a subject.

REJECTION UNDER 35 U.S.C. § 102(E)

Claims 1-4, 16-17 and 20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kuusela et al., U.S. Patent No 6,396,416. In addition, claims 1-4, 17-21 and 29 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Heinonen et al., U.S. Patent No. 6,295,506. These rejections are respectfully traversed.

Independent claim 1 sets forth a combination of limitations including “a wireless device having circuitry for performing a wireless function independent from sensing at least one prescribed characteristic of a subject and using at least a portion of said circuitry for performing

said independent wireless function to also sense at least one prescribed characteristic of a subject.” (Emphasis added.) The other rejected independent claims of the instant application set forth subject matter which is of similar nature to that set forth in independent claim 1. Therefore, Applicants will not quote directly from these addition independent claims, as it is respectfully submitted that these claims are allowable for the same reasons, as discussed in the following, independent claim 1 is allowable over the patent documents relied upon by the Examiner.

Kuusela et al. teach an add-on unit that may be connected to a mobile phone 10. The add-on unit includes a basic unit 21 and a sensor unit 22 that may be coupled to a mobile phone 10. (See column 2, lines 1-2.) Functionally, the basic unit 21 is to launch the measuring of the required bodily functions, to carry out the digitizing of the measuring signals, stores measuring results in a memory and, if necessary, will transmit these results, using the mobile phone 10, to a nursing unit in a required form. (See column 2, lines 8-13.)

As is understood from the relied upon patent, the sensor unit 22 is a measuring device that may be connected directly to a subject in order to measure physical characteristics thereof. These measurements from the sensor unit 22 are sent to the basic unit 21. The measurements may either be stored in the basic unit 21, and/or transmitted via the mobile phone 10 to a nursing unit.

The mobile phone 10 is only used in a conventional manner. That is, the mobile phone 10 is incapable of using “circuitry for performing said independent wireless function to also sense at least one prescribed characteristic of a subject.” Instead, the wireless functionality of mobile phone 10 is used merely as a conduit to send data obtained and stored by the basic unit 21. Such

functionality taught by Kuusela et al. does not approach that which is set forth in the independent claims of the instant application.

Heinonen et al. teach a measurement apparatus that includes a mobile telephone 1. As is illustrated in Figure 1 of the relied upon patent, the mobile telephone 1 includes a modified battery unit that incorporates a measurement unit 2. The measurement unit 2 includes an internal reflectometry system 3 that is operable to measure a color change in a consumable reagent 4 relative to some predetermined base level. (See column 4, lines 10-13.) The measurement unit 2 operates in conjunction with a test strip 5 that includes the reagent 4. In particular, a user that has deposited a blood sample on the reagent 4, may insert the test strip 5 into the measurement unit 2 so that analysis thereof may occur. (See column 4, lines 49-57.) In response to the insertion of the test strip 5, the mobile phone 1 and its wireless circuitry may be used to transmit data to an automatic telephone answering device 10. (See column 4, lines 60-64.)

In summary, the system according to Heinonen et al. uses the operability of the mobile telephone 1 in order to transmit data to the telephone answering device 1. Therefore, the mobile telephone 1 does not include "circuitry for performing said independent wireless function to also sense at least one prescribed characteristic of a subject." It is clearly impossible that the mobile telephone 1 according to Heinonen et al. is capable of achieving this functionality, since Heinonen et al. admit that the mobile telephone 1 "comprises modified software but is otherwise conventional." (See column 4, lines 3-4.)

With regard to the rejected dependent claims, Applicants respectfully submit that these claims are allowable at least due to their dependent upon an allowable independent claim.

In accordance with the above discussion, Applicants respectfully request reconsideration and withdrawal of the claim rejections under 35 U.S.C. § 102(e).

REJECTION UNDER 35 U.S.C. § 103(A)

Claims 1-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karlsson et al., U.S. Patent No. 6,038,469 in view of Matsumura et al., U.S. Patent No. 6,161,036. This rejection is respectfully traversed.

Generally speaking, Karlsson et al. teach a monitoring system that includes a central monitoring unit 10, a central workstation 11, a laser printer 12 and a plurality of bedside monitors 13. These bedside monitors 13 are used to monitor characteristics of at least one patient.

The Examiner has relied upon Matsumura et al. in combination with Karlsson et al. asserting that wireless transmitters taught by Matsumura et al. may be used to substitute for the cable connected sensors of the Karlsson et al. monitoring device.

Without addressing the propriety of the Examiner's combination, Applicants nonetheless respectfully submit that the wireless functionality taught by Matsumura et al. patent document does not approach that which is set forth in the independent claims of the instant application. In particular, Matsumura et al. teach the use of a loop antenna 3 that is generally part of a living body placement section 1. (See column 5, lines 66-67.) In addition to the loop antenna 3, the living body placement section 1 also includes a transmitter 5 that includes electric circuitry 10. Operationally, the living body placement section 1 is only capable of measuring attributes of a living body to which the section 1 is connected. Matsumura et al. fail to teach or suggest that the

living body placement section 1 includes “circuitry for performing a wireless function independent from sensing... and using at least a portion of said circuitry for performing said independent wireless function to also sense at least one prescribed characteristic of a subject.” (See claim 1 of the instant application.)

With regard to the rejected dependent claims, Applicants respectfully submit that these claims are allowable at least due to their dependence upon an allowable independent claim.

In accordance with the above, Applicants respectfully submit that the rejection under 35 U.S.C. § 103(a) must be withdrawn.

In view of the above remarks, Applicants respectfully submit that the claims of the instant application clearly define the present invention over the patent documents relied upon by the Examiner. Accordingly, reconsideration and withdrawal of the claim rejections are respectfully requested.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite the prosecution of this application, the Examiner is invited to telephone Timothy R. Wyckoff (Reg. No. 46,175) at (703) 390-3030 in the Washington D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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VERSION OF MARKED-UP CHANGES

IN THE SPECIFICATION

The specification has been amended as follows:

Page 7-8, lines 19-22

Some wireless LAN adapters like Lucent Technologies' WaveLAN™ card use a time-duplex system, which means that a signal can not be simultaneously transmitted and received. However, the WaveLAN™ card employs two antennas in a diversity system as shown in Fig. 5. Namely, as shown in Fig. 5, the WaveLAN™ card 70 includes first and second antennas 72 and 74 connected to a diversity system 76. The input/output of the diversity system 76 is connected to a transmit/receive (T/R) switch 78, and the transmitter/receiver architecture 80 is connected to the T/R switch 78. When transmitting, the T/R switch 78 connects the transmitter portion of the transmitter/receiver architecture 80 with the antenna 72 through the diversity switching system 76. When receiving, the T/R switch 78 connects the receiver portion of the transmitter/receiver architecture 90 with the antennas 72 and 74 through the diversity switching system 76.

Page 8, line 6

Through software or hardware modifications, the antennas operate as separate transmit and receiver antennas for performing transmission and reception simultaneously during the non-invasive measuring as shown in Fig. 6. Specifically, in the modified WaveLAN™ card according to one embodiment of the present invention, the T/R switch 78 is redesigned to operate in a non-invasive measuring mode such that, as shown in Fig. 6, the transmitter and receiver

portions of the transmitter/receiver architecture 80 are each connected to a respective one of the first and second antennas 72 and 74. Fig. 6 is conceptual block diagram of the wireless LAN adapter's operation in the measuring mode, consequently, the T/R switch 78 has been eliminated from the figure for the sake of clarity.